DOCUMENT RESUME

ED 068 556 TM 002 037

TITLE	Manager, Restaurant or Coffee Shop (hotel & rest.) 187.168--Technical Report on Development of USES Aptitude Test Battery.
INSTITUTION	Manpower Administration (DOL), Washington, D.C. U.S. Training and Employment Service.
REPORT NO	S-425
PUB DATE	Nov 68
NOTE	16p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Aptitude Tests; *Cutting Scores; Dining Facilities; Evaluation Criteria; Food Service; Job Applicants; *Job Skills; *Managerial Occupations; Norms; Occupational Guidance; *Personnel Evaluation; Test Reliability; Test Validity
IDENTIFIERS	GATB; *General Aptitude Test Battery; Restaurant Manager

ABSTRACT

The United States Training and Employment Service General Aptitude Test Battery (GATB), first published in 1947, has been included in a continuing program of research to validate the tests against success in many different occupations. The GATB consists of 12 tests which measure nine aptitudes: General Learning Ability; Verbal Aptitude; Numerical Aptitude; Spatial Aptitude; Form Perception; Clerical Perception; Motor Coordination; Finger Dexterity; and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, and a standard deviation of 20. Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, when combined, predict job performance. Cutting scores are set only for those aptitudes which aid in predicting the performance of the job duties of the experimental sample. The GATB norms described are appropriate only for jobs with content similar to that shown in the job description presented in this report. A description of the validation sample and a personnel evaluation form are also included. (AG)

S-425

ED 068556

T1 002 037

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

Development of USES Aptitude Test Battery

for

Manager, Restaurant or Coffee Shop

(hotel & rest.) 187.168

U.S. DEPARTMENT OF LABOR

MANPOWER ADMINISTRATION

ED 068556

Technical Report on Development of USES Aptitude Test Battery

For . . .

Manager, Restaurant or Coffee Shop (hotel & rest.) 187.168

S-425

(Developed in Cooperation with the
North Carolina State Employment Service)

U.S. DEPARTMENT OF LABOR
Willard Wirtz, Secretary

MANPOWER ADMINISTRATION
Stanley H. Ruttenberg,
Administrator

BUREAU OF EMPLOYMENT SECURITY
Robert C. Goodwin, Administrator

U.S. EMPLOYMENT SERVICE
Charles E. Odell,
Director

November 1968

FOREWORD

The United States Employment Service General Aptitude Test Battery (GATB) was first published in 1947. Since that time the GATB has been included in a continuing program of research to validate the tests against success in many different occupations. Because of its extensive research base the GATB has come to be recognized as the best validated multiple aptitude test battery in existence for use in vocational guidance.

The GATB consists of 12 tests which measure 9 aptitudes: General Learning Ability, Verbal Aptitude, Numerical Aptitude, Spatial Aptitude, Form Perception, Clerical Perception, Motor Coordination, Finger Dexterity, and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, with a standard deviation of 20.

Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, in combination, predict job performance. For any given occupation, cutting scores are set only for those aptitudes which contribute to the prediction of performance of the job duties of the experimental sample. It is important to recognize that another job might have the same job title but the job content might not be similar. The GATB norms described in this report are appropriate for use only for jobs with content similar to that shown in the job description included in this report.

Charles E. Odell, Director
U.S. Employment Service

GATB Study #2717

DEVELOPMENT OF USES APTITUDE TEST BATTERY

for

Manager, Restaurant or Coffee Shop (hotel & rest.) 187.168-126

S-425

This report describes research undertaken for the purpose of developing General Aptitude Test Battery (GATB) norms for the occupation of Manager, Restaurant or Coffee Shop (hotel & rest.) 187.168-126. The following norms were established:

GATB Aptitudes	Minimum Acceptable GATB Scores
V - Verbal Aptitude	85
Q - Clerical Perception	95
K - Motor Coordination	90

RESEARCH SUMMARY

Sample: 76 (75 male and 1 female) workers employed as Managers and Assistant Managers of quick service drive-ins with standard menu in North Carolina, South Carolina, and Virginia.

Criterion: Supervisory ratings.

Design: Concurrent (test and criterion data were collected at approximately the same time).

Minimum aptitude requirements were determined on the basis of a job analysis and statistical analyses of aptitude mean scores, standard deviations, aptitude-criterion correlations and selective efficiencies.

Concurrent Validity: Phi Coefficient = .25 ($P/2 < .025$)

Effectiveness of Norms: Only 64% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-425 norms, 76% would have been good workers. 36% of the nontest-selected workers used for this study were poor workers; if the workers had been

test-selected with the S-425 norms, only 24% would have been poor workers. The effectiveness of the norms is shown graphically in Table 1:

TABLE 1

Effectiveness of Norms

	Without Tests	With Tests
Good Workers	64%	76%
Poor Workers	36%	24%

SAMPLE DESCRIPTION

Size: N = 76

Occupational Status: Employed workers.

Work Setting: Workers were employed at Hardee's Food Systems, Inc. and Ray's Restaurants, Inc. in North Carolina, South Carolina, and Virginia.

Employer Selection Requirements:

Education: High school graduate preferred but not a firm requirement

Previous Experience: None

Tests: None

Other: Personal Interview

Principal Activities: The job duties for each worker are comparable to those shown in the job description in the appendix.

Minimum Experience: All workers in the study had two months or more experience on the job.

TABLE 2

Means, Standard Deviation (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education, and Experience

	Mean	SD	Range	r
Age (years)	33.3	10.0	18-57	.002
Education (years)	11.5	1.8	7-16	.115
Experience (months)	24.6	18.2	2-78	.170

EXPERIMENTAL TEST BATTERY

All 12 tests of the GATB, B-1002B were administered during the period from November 1967 to March 1968.

CRITERION

The criterion data consisted of supervisory ratings of job proficiency. Ratings and reratings for each worker were made by area supervisors approximately the same time as tests were administered with a time interval of at least two weeks between ratings.

Rating Scale: The USES Descriptive Rating Scale, Form SP-21, was used. The scale (see Appendix) consists of nine items of employee performance with five performance levels shown for each item.

Reliability: The coefficient of reliability between the two ratings was .83 indicating a significant relationship. The final criterion consisted of the combined score of the two ratings.

Criterion Distribution:

Possible Range:	18-90
Actual Range:	40-86
Mean:	62.3
Standard Deviation:	10.0

Criterion Dichotomy: The criterion distribution was dichotomized by the analyst into high and low groups by placing 36% of the sample in the low criterion group to correspond with the percentage of workers considered unsatisfactory or marginal. Workers in the high criterion group were designated as "good workers" and those in the low group as "poor workers." The criterion critical score is 58.

APTITUDES CONSIDERED FOR INCLUSION IN THE NORMS

Aptitudes were selected for tryout in the norms on the basis of a qualitative analysis of job duties involved and a statistical analysis of test and criterion data. Aptitudes V, Q, and K which do not have a high correlation with the criterion were considered for inclusion in the norms. Aptitude V was considered for inclusion in the norms because the qualitative analysis indicated that this aptitude was important for the job duties and the sample had a relatively

low standard deviation for this aptitude. Aptitude Q was considered because the qualitative analysis indicated it was important for the job duties and the sample had a relatively high mean score. Aptitude K was considered for inclusion in the norms because the sample had a relatively high mean score and a significantly low standard deviation for the aptitude. Tables 3, 4, and 5 show the results of the qualitative and statistical analyses.

TABLE 3

Qualitative Analysis
(Based on the job analysis, the aptitudes indicated appear to be important to the work performed)

Aptitude	Rationale
V - Verbal Aptitude	Necessary in training and supervising employees and following verbal and written instructions.
Q - Clerical Perception	Necessary in keeping accurate records and checking invoices.
K - Motor Coordination	Necessary in training employees in proper techniques of cooking, filling orders, operating cash register and food service equipment, and cleaning equipment.

TABLE 4

Means, Standard Deviation (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for the Aptitudes of the GATB

Aptitudes	Mean	SD	Range	r
G - General Learning Ability	100.2	17.0	66-161	.107
V - Verbal Aptitude	94.3	14.2	65-139	.156
N - Numerical Aptitude	103.2	17.6	61-158	.189
S - Spatial Aptitude	99.3	17.3	65-143	.076
P - Form Perception	101.1	19.4	58-158	.019
Q - Clerical Perception	106.7	15.5	77-166	.146
K - Motor Coordination	105.8	14.5	66-136	.140
F - Finger Dexterity	90.6	19.8	49-139	.132
M - Manual Dexterity	105.4	21.3	62-158	.137

TABLE 5

Summary of Qualitative and Quantitative Data

Type of Evidence	Aptitudes								
	G	V	N	S	P	Q	K	F	M
Job Analysis Data: Important	X	X	X		X	X			
Irrelevant									
Relatively High Mean						X	X		X
Relatively Low Standard Dev.		X					X		
Significant Correlation with Criterion									
Aptitudes to be Considered for Trial Norms		V				Q	K		

DERIVATION AND VALIDITY OF NORMS

Final norms were derived on the basis of a comparison of the degree to which trial norms consisting of various combinations of Aptitudes V, Q, and K, at trial cutting scores were able to differentiate between the 64% of the sample considered good workers and 36% of the sample considered poor workers. Trial cutting scores at five point intervals approximately one standard deviation below the mean are tried because this will eliminate about one-third of the sample with three-aptitude norms. For two-aptitude trial norms, minimum cutting scores of slightly more than one standard deviation below the mean will eliminate about one-third of the sample; for four aptitude trial norms, cutting scores of slightly lower than than one standard deviation below the mean will eliminate about one-third of the sample. The Phi Coefficient was used as a basis for comparing trial norms. The optimum differentiation for the occupation of Manager, Restaurant or Coffee Shop (hotel & rest.) 187.168-126 was provided by the norms of V-85, Q-95, and K-90. The validity of these norms is shown in Table 6 and is indicated by a Phi Coefficient of .25 (statistically significant at the .025 level).

TABLE 6

Concurrent Validity of Test Norms V-85, Q-95, and K-90

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Workers	15	34	49
Poor Workers	16	11	27
Total	31	45	76

Phi Coefficient (ϕ) = .25 Chi Square (X^2_y) = 4.8
Significance Level = $P/2 < .025$

DETERMINATION OF OCCUPATIONAL APTITUDE NORMS

The data for this study did not meet the requirements for incorporating the occupation studied into any of the 36 OAP's included in Section II of the Manual for the General Aptitude Test Battery. The data for this sample will be considered for future groupings of occupations in the development of new occupational aptitude patterns.

SP-21
Rev. 2/61

A-P-P-E-N-D-I-X

DESCRIPTIVE RATING SCALE
(For Aptitude Test Development Studies)

Score_____

RATING SCALE FOR _____
D. O. T. Title and Code

Directions: Please read Form SP-20, "Suggestions to Raters", and then fill in the items listed below. In making your ratings, only one box should be checked for each question.

Name of Worker (print) _____
(Last) (First)

Sex: Male_____ Female_____

Company Job Title: _____

How often do you see this worker in a work situation?

☐ See him at work all the time.

☐ See him at work several times a day.

☐ See him at work several times a week.

☐ Seldom see him in work situation.

How long have you worked with him?

☐ Under one month.

☐ One to two months.

☐ Three to five months.

☐ Six months or more.

A. How much work can he get done? (Worker's ability to make efficient use of his time and to work at high speed.)

☐ 1. Capable of very low work output. Can perform only at an unsatisfactory pace.

☐ 2. Capable of low work output. Can perform at a slow pace.

☐ 3. Capable of fair work output. Can perform at an acceptable but not a fast pace.

☐ 4. Capable of high work output. Can perform at a fast pace.

☐ 5. Capable of very high work output. Can perform at an unusually fast pace.

B. How good is the quality of his work? (Worker's ability to do high-grade work which meets quality standards.)

☐ 1. Performance is inferior and almost never meets minimum quality standards.

☐ 2. The grade of his work could stand improvement. Performance is usually acceptable but somewhat inferior in quality.

☐ 3. Performance is acceptable but usually not superior in quality.

☐ 4. Performance is usually superior in quality.

☐ 5. Performance is almost always of the highest quality.

C. How accurate is he in his work? (Worker's ability to avoid making mistakes.)

☐ 1. Makes very many mistakes. Work needs constant checking.

☐ 2. Makes frequent mistakes. Work needs more checking than is desirable.

☐ 3. Makes mistakes occasionally. Work needs only normal checking.

☐ 4. Makes few mistakes. Work seldom needs checking.

☐ 5. Rarely makes a mistake. Work almost never needs checking.

D. How much does he know about his job? (Worker's understanding of the principles, equipment, materials and methods that have to do directly or indirectly with his work.)

☐ 1. Has very limited knowledge. Does not know enough to do his job adequately.

☐ 2. Has little knowledge. Knows enough to "get by."

☐ 3. Has moderate amount of knowledge. Knows enough to do fair work.

☐ 4. Has broad knowledge. Knows enough to do good work.

☐ 5. Has complete knowledge. Knows his job thoroughly.

E. How much aptitude or facility does he have for this kind of work? (Worker's adeptness or knack for performing his job easily and well.)

☐ 1. Has great difficulty doing his job. Not at all suited to this kind of work.

☐ 2. Usually has some difficulty doing his job. Not too well suited to this kind of work.

☐ 3. Does his job without too much difficulty. Fairly well suited to this kind of work.

☐ 4. Usually does his job without difficulty. Well suited to this kind of work.

☐ 5. Does his job with great ease. Exceptionally well suited for this kind of work.

F. How large a variety of job duties can he perform efficiently? (Worker's ability to handle several different operations in his work.)

☐ 1. Cannot perform different operations adequately.

☐ 2. Can perform a limited number of different operations efficiently.

☐ 3. Can perform several different operations with reasonable efficiency.

☐ 4. Can perform many different operations efficiently.

☐ 5. Can perform an unusually large variety of different operations efficiently.

G. How resourceful is he when something different comes up or something out of the ordinary occurs? (Worker's ability to apply what he already knows to a new situation.)

☐ 1. Almost never is able to figure out what to do. Needs help on even minor problems.

☐ 2. Often has difficulty handling new situations. Needs help on all but simple problems.

☐ 3. Sometimes knows what to do, sometimes doesn't. Can deal with problems that are not too complex.

☐ 4. Usually able to handle new situations. Needs help on only complex problems.

☐ 5. Practically always figures out what to do himself. Rarely needs help, even on complex problems.

H. How many practical suggestions does he make for doing things in better ways? (Worker's ability to improve work methods.)

☐ 1. Sticks strictly with the routine. Contributes nothing in the way of practical suggestions.

☐ 2. Slow to see new ways to improve methods. Contributes few practical suggestions.

☐ 3. Neither quick nor slow to see new ways to improve methods. Contributes some practical suggestions.

☐ 4. Quick to see new ways to improve methods. Contributes more than his share of practical suggestions.

☐ 5. Extremely alert to see new ways to improve methods. Contributes an unusually large number of practical suggestions.

I. Considering all the factors already rated, and <u>only</u> these factors, how acceptable is his work? (Worker's "all-around" ability to do his job.)

☐ 1. Would be better off without him. Performance usually not acceptable.

☐ 2. Of limited value to the organization. Performance somewhat inferior.

☐ 3. A fairly proficient worker. Performance generally acceptable.

☐ 4. A valuable worker. Performance usually superior.

☐ 5. An unusually competent worker. Performance almost always top notch.

FACT SHEET

Job Title: Manager, Restaurant or Coffee Shop (hotel & rest.) 187.168.126

Job Summary: Supervises workers and coordinates activities of a quick service drive-in restaurant with a standard menu. Keeps records, requisitions supplies and maintains grounds, buildings and equipment.

Work Performed:

Selects and hires employees to work in restaurant. Trains employees to operate cash register, fill orders, prepare food and maintain equipment, building and grounds.

Schedules staff to meet hourly and daily trends of business. Coordinates activities of employees to maximize efficiency and minimize waste.

Establishes minimum stock levels based upon past and anticipated needs. Inventories and orders required level of food, paper and office supplies to maintain adequate stocks. Checks incoming shipments against invoices to detect shortages and damage.

Keeps time and production records to conform to statutory and company regulations.

Inspects grounds, building and equipment for cleanliness and conformity to sanitary and operating regulations.

Supervises maintenance or requests repair services to keep restaurant attractive and operational.

Effectiveness of Norms:

Only 64% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-425 norms, 76% would have been good workers. Thirty-six percent of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the S-425 norms only 24% would have been good workers.

Applicability of S-425 Norms:

The aptitude test battery is applicable to jobs which include a majority of the duties described above.

GPO 865-889

U.S. DEPARTMENT OF LABOR
BUREAU OF EMPLOYMENT SECURITY
WASHINGTON, D.C. 20210

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF LABOR

THIRD CLASS MAIL